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**Shortest path****P81453\_en**

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Write a program that, given a directed graph with  $n$  vertices (numbered from 0 to  $n - 1$ ) and  $m$  arcs, prints the shortest way to go from 0 to  $n - 1$ .

**Input**

Input consists of several cases. Every case begins with  $n$  and  $m$ . Follow  $m$  pairs  $x\ y$  to indicate an arc from  $x$  to  $y$ . There are no repeated arcs nor of the kind  $x\ x$ . There is always a path between 0 and  $n - 1$ . You can assume  $2 \leq n \leq 10^4$  and  $1 \leq m \leq 5n$ .

**Output**

For every case, print the vertices of the shortest path between 0 and  $n - 1$  separated by spaces. If there is more than one shortest path, print the smallest in lexicographical order.

**Sample input 1**

```
10 11
8 2  0 1  4 0  1 4  3 9  4 6
6 9  0 8  2 9  0 7  7 3

2 2
1 0  0 1
```

**Sample output 1**

```
0 7 3 9
0 1
```

**Problem information**

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